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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,459	12/20/2005	Wilhelmus Johannes Van Houtum	NL 030714	8228

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EXAMINER	
HANNON, CHRISTIAN A	
ART UNIT	**PAPER NUMBER**
2618	

NOTIFICATION DATE	DELIVERY MODE
11/30/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/561,459	VAN HOUTUM, WILHELMUS JOHANNES	
	Examiner	Art Unit	
	Christian A. Hannon	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,7 and 10* is/are rejected.

7)☒ Claim(s) *2,4-6,8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This action is response to applicant's response filed on 10/05/2007. Claims 1-10 are now pending in the present application. **This action is made final.**

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 7 & 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rozmaryn (US 6,128,494) in view of Kantschuk (US 6,683,913).

Regarding claim 1, Rozmaryn teaches a method of canceling a narrow band interference signal in a receiver, comprising the steps of subtracting a reference signal from a received input signal (Column 4, Lines 46-48; Rozmaryn), calculating the phase of a result of the subtraction on the basis of an arctangent function (Column 4, Lines 50-52; Rozmaryn), performing an unwrap function on the output signal from the arctangent function, by removing the modulo 2 Pi limitation introduced with the arctangent function, thereby producing an absolute phase representation (Column 4, Lines 52-54; Rozmaryn), determining a frequency offset by comparing phase representation values which are shifted predetermined in time (Column 5, Lines 15-17; Rozmaryn). However Rozmaryn fails to teach canceling the narrow band interference signal based on the result of the determined frequency offset. Kantschuk teaches canceling a narrow band

interference signal based on the result of a determined frequency offset (Column 2, Lines 55-61; Kantschuk). Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Rozmaryn with those of Kantschuk in order to provide for a correction method in addition to mere detection of an error.

Regarding claim 3, Rozmaryn teaches the method of claim 1, characterized in that the subtracting step can be hold a predetermined period of time, if there is no reference signal available to perform the subtraction (Column 4, Lines 46-50; Rozmaryn).

Regarding claim 7, Rozmaryn teaches an apparatus characterized in that the apparatus comprises a subtracting unit for subtracting a reference signal from a received input signal (Column 4, Lines 46-48; Rozmaryn), a complex phase calculator for calculating the phase of a result of the subtraction signal on a sample-by-sample basis of the in phase and quadrature components of the signal and performing an arctangent function on the in phase and quadrature components of the incoming signal (Column 4, Lines 50-52; Rozmaryn), a phase unwrap module for removing discontinuities in the phase if the phase passes the in phase axes in the complex plane with an absolute value grater than Pi (Column 4, Lines 52-54), a comparator module arranged to compare the difference in phase signal values at predetermined time intervals, the difference in said values representing a frequency offset in the subtracting signal (Column 5, Lines 15-17; Rozmaryn). However Rozmaryn fails to teach canceling the narrow band interference signal based on the result of the determined frequency offset. Kantschuk teaches canceling a narrow band interference signal based on the

result of a determined frequency offset (Column 2, Lines 55-61; Kantschuk). Therefore it would have been obvious to one of ordinary skill in the art to combine the teachings of Rozmaryn with those of Kantschuk in order to provide for a correction method in addition to mere detection of an error.

Regarding claim 10, Rozmaryn and Kantschuk teach the apparatus according to claim 7, characterized in that the canceling means comprises a generating means for generating a second narrow-band signal, which corresponds to the narrow band interference signal, and a subtracting means for subtracting the second narrow band signal from the distorted desired wide band signal (Column 2, Lines 55-61; Kantschuk).

Allowable Subject Matter

3. Claims 2 & 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, Rozmaryn & Kantschuk teach the method of claim 1, however Rozmaryn and Kantschuk fail to teach the method characterized in that the unwrap function accumulates k times 2 Pi, where k depends on the wrapped function so that k will be increased by 1 if the difference between the last corrected sample and the current sample is smaller than –Pi and k will be decreased by 1 if the difference between the last corrected sample and the current sample is greater than n.

Regarding claim 8, Rozmaryn & Kantschuk teach the method of claim 7, however Rozmaryn and Kantschuk fail to teach the method characterized in that the phase

unwrap module is adapted to accumulate k times 2 Pi, where k depends on the wrapped function so that k will be increased by 1 if the difference between the last corrected sample and the current sample is smaller than –Pi and k will be decreased by 1 if the difference between the last corrected sample and the current sample is greater than Pi.

Claims 4-6 are objected to as they depend from claim 2.

Claim 9 is objected to as it depends from claim 8.

Response to Arguments

4. Applicant's arguments filed 10/05/2007 have been fully considered but they are not persuasive. It is noted by the examiner that two sets of Remarks were filed by the applicant. The examiner has drafted this response to the later filed remarks.

Regarding applicants claim that "Rozmaryn does not locate a narrow-band interferer within a wider spectrum" (Applicant Remarks, Page 2), the examiner respectfully disagrees. Rozmaryn teaches finding a ratio of interfering signals to those of the expected signals. Therefore as the signal interference is not occupying the entire channel spectrum, it is therefore "narrower" than the channel. It is further noted by the examiner that the Kantschuk teachings were relied on for the actual canceling of a narrowband signal.

In response to applicant's argument that the Kantschuk reference is nonanalogous art, that is it is technically-nonsensical, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be

reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, both the Rozmaryn and Kantschuk references pertain to transceiver art, and the Kantschuk reference itself discloses that its methods may be applied to other types of receivers, that is that the medium of the channel is irrelevant (Column 13, Lines 4-7).

Therefore the claims 1, 3, 7 & 10 remain rejected as set forth above in this action.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christian A. Hannon whose telephone number is (571) 272-7385. The examiner can normally be reached on Mon. - Fri. 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

C. A. Hannon
November, 20th 2007

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